

CLAIMS

Having thus described the invention, what is claimed as new and desired to be secured by Letters Patent is:

1. In combination with a head assembly for producing a two layer material flow, the two layer flow having a first inner layer and a second outer layer, a downstream melt distributor housing attached to said head assembly for presenting a combined material flow of said first and second layers coated with an exterior layer of material, said melt distributor housing comprising:

a first upstream housing portion;

a first channel in said first upstream housing portion adapted for a downstream flow of the first layer of material therethrough;

a second channel in said first upstream housing portion adapted for a downstream flow of the second layer of material therethrough;

said first and second channels in said first upstream housing portion configured for melding said first and second material flows at a downstream juncture in said first housing portion, whereby to present a combined first and second material flow;

a second downstream housing portion;

channel means in said second housing portion adapted for a downstream flow of said combined first and second material flow from said juncture;

an inlet in said second housing portion for flow of a third material therethrough;

sinuous channel means in at least said second downstream housing portion and in communication with said inlet for a flow of said third material from said inlet and about said first and second combined material flow, said sinuous channel means having a downstream outlet in communication with said channel means for a

melding of the third material about said combined first and second material flow through said channel means, said melding resulting in a three layer material flow, said three layer material flow comprising the first material as an interior layer, the second material as an intermediate layer and the third material as said exterior layer.

2. The device as claimed in claim 1 wherein said sinuous channel means comprises:

a sinuous path having a first end in communication with said inlet, said sinuous path having a second end adjacent said channel means having said combined first and second material flow therein;

an outlet at said second end of said sinuous path and in communication with said channel means, said outlet depositing said third material into said channel means.

3. The device as claimed in claim 2 wherein said second end of said sinuous path presents an annular scroll-like path about said channel means, said outlet presenting an annular outlet at said second end of said path in communication with said channel means for discharging the third material flow into an annular flow about the combined material flow in said channel means.

4. The device as claimed in claim 2 wherein said sinuous path comprises first and second paths having a common first end point in communication with said inlet, said paths diverging in opposed directions relative to said inlet with each of said paths presenting an outlet for discharge of the third material into said channel means at different points about the combined flow.

5. The device as claimed in claim 4 further comprising an annular scroll-like path in communication with said respective outlets of said first and second paths, said scroll-like path presenting an annular outlet for annular discharge of the third material flow about the combined material flow in said channel means.

6. The device as claimed in claim 4 wherein said first and second paths split downstream into further paths, said further paths each having an outlet for discharge of the third material at different points into said channel means containing the combined material flow.

7. The device as claimed in claim 6 further comprises a scroll-like path in communication with said respective outlets of said further paths, the third material being discharged from each respective outlet and into an annular outlet of said scroll-like path for an annular discharge of the third material about the combined material flow in said channel means.

8. In combination with an upstream head assembly producing a two layer material flow having a first interior layer and a second intermediate layer, a downstream melt distributor adapted for attachment to said head assembly for coating said two layer material flow with an exterior layer of material, said melt distributor comprising:

a housing;

a first inlet in said housing adapted for flow of the first layer of material from the upstream head assembly therethrough;

a second inlet in said housing adapted for flow of the second intermediate layer of material from the upstream head assembly;

means in said housing for melding said first and second material flows at a downstream juncture therein, whereby to present a combined first and second material flow;

channel means in said housing adapted for passage of said combined material flow therethrough;

a third inlet in said second housing for flow of a third material therethrough;

sinuous channel means in communication with said third inlet for a flow of said third material from said third inlet and about said combined material flow in said channel means, said sinuous channel means having a downstream outlet for a melding of the third material about said combined material flow in said channel means, said melding resulting in a three layer material flow through said housing.

9. The device as claimed in claim 8 wherein said sinuous channel means comprises:

a sinuous channel path in said housing, said sinuous channel path presenting a plurality of outlets about said channel means, a discharge of the third material from said outlets of said sinuous channel path discharging the third material from said outlets and about the combined material flow.

10. The device as claimed in claim 9 further comprising an annular scroll-like path in communication with said plurality of outlets of said sinuous channel path, said scroll-like path having an outlet for discharging the material flow of the third material about the combined material flow.

11. The device as claimed in claim 9 wherein said sinuous channel paths comprises first and second paths having a starting point in communication with said third inlet, said paths diverging in opposed directions with each of said paths presenting an outlet for discharge of the third material at different points about the combined flow.

12. The device as claimed in claim 11 further comprising an annular scroll-like path in communication with said outlets of said first and second paths, said scroll-like path having an annular outlet for discharging the third material flow about the combined material flow.

13. The device as claimed in claim 11 wherein each said first and second paths split into further paths, said further paths each having an outlet for discharge of the third material at different points about the combined material flow.

14. The device as claimed in claim 13 further comprising a scroll-like path in communication with said respective outlets of said further paths, the third material being discharged from each respective outlet and into said scroll-like path, said scroll-like path having an annular outlet for discharge of the third material about the combined material flow.

15. In combination with a head assembly for providing an upstream material flow, a downstream melt distributor attached to said head assembly for coating said material flow with a layer of a second material, said melt distributor comprising:

a housing;

channel means in said housing adapted for passage of the upstream material flow therethrough;

means in said housing for initial input of a second material therein;

sinuous channel means in said housing and in communication with said input means for directing a flow of the second material about said material flow in said channel means, said sinuous channel means having a plurality of downstream outlets about the material flow for a melding of the second material with the material flow.

16. The device as claimed in claim 15 wherein said sinuous channel means comprises a sinuous path in said housing, said second path winding about said material flow and presenting a plurality of downstream outlets surrounding the material flow.

17. The device as claimed in claim 16 wherein said sinuous channel means includes an annular scroll-like path in communication with said downstream outlets of said sinuous path, said scroll-like path presenting an annular outlet for discharging the material flow of the material about the material flow.

18. The device as claimed in claim 16 wherein said sinuous path comprises at least first and second paths having a common starting point in communication with said input means, each said path having an outlet at different points about the material flow.

19. The device as claimed in claim 18 further comprising an annular scroll-like path in communication with each said outlet of said at least first and second paths, said scroll-like path having a generally annular outlet for discharging the second material about the material flow.

20. The device as claimed in claim 18 wherein each said first and second paths split into further paths, said further paths each having downstream outlets for discharge of the second material at a plurality of points about the material flow.